

Claims

1. Heat-sensitive element comprising
 - (a) an optionally pretreated substrate
 - (b) a positive working heat-sensitive coating comprising
 - (i) at least 40 wt.-%, based on the dry weight of the coating, of at least one polymer soluble in aqueous alkaline developer selected from novolak resins, functionalized novolak resins, polyvinylphenol resins, polyvinyl cresols and poly(meth)acrylates with phenolic and/or sulfonamide side groups,
 - (ii) 0.1 - 20 wt.-%, based on the dry weight of the coating, of at least one (C₄-C₂₀ alkyl)phenol novolak resin insoluble in aqueous alkaline developer, and
 - (iii) optionally at least one further component selected from polymer particles, surfactants, contrast dyes and pigments, inorganic fillers, antioxidants, print-out dyes, carboxylic acid derivatives of cellulose polymers, plasticizers and substances capable of absorbing radiation of a wavelength from the range of 650 to 1,300 nm and converting it into heat.
2. Heat-sensitive element according to claim 1, wherein component (i) is a novolak resin or a mixture of novolak resins.
3. Heat-sensitive element according to claim 1 or 2, wherein component (i) is a cresol novolak, a cresol-phenol novolak or a mixture thereof.
4. Heat-sensitive element according to any of claims 1 to 3, wherein component (ii) is a butylphenol novolak or an octylphenol novolak.
5. Heat-sensitive element according to any of claims 1 to 4, wherein the heat-sensitive coating comprises a carboxylic acid derivative of a cellulose polymer.

6. Heat-sensitive element according to any of claims 1 to 5, wherein the at least one polymer soluble in aqueous alkaline developer is present in an amount of 50 to 95 wt.-%, based on the dry weight of the coating.
7. Heat-sensitive element according to any of claims 1 to 6, wherein the at least one (C₄-C₂₀ alkyl)phenol novolak resin insoluble in aqueous alkaline developer is present in an amount of 0.5 to 12 wt.-%, based on the dry weight of the coating.
8. Heat-sensitive element according to any of claims 1 to 7, wherein the element is a lithographic printing plate precursor.
9. Heat-sensitive element according to claim 8, wherein the substrate is an aluminum substrate which prior to being coated with the heat-sensitive coating was subjected to at least one treatment selected from (a) mechanical and/or chemical graining, (b) anodizing and (c) hydrophilizing.
10. Heat-sensitive element according to claim 8 or 9, wherein the dry weight of the coating is 0.5 to 4.0 g/m².
11. Process for the production of a heat-sensitive element as defined in any of claims 1 to 10 comprising:
 - (a) providing an optionally pretreated substrate,
 - (b) applying a solution comprising components (i), (ii) and optionally (iii) as defined in any of claims 1 to 7,
and
 - (c) drying.
12. Process for the production of a heat-sensitive element as defined in any of claims 1 to 10 comprising:
 - (a) providing an optionally pretreated substrate,
 - (b) applying a solution comprising component (i) and optionally (iii) as defined in any of claims 1 to 7,
 - (c) drying

- (d) applying a solution comprising component (ii) and optionally (iii) as defined in any of claims 1 to 7, and
- (e) drying.

13. Process for imaging a heat-sensitive element comprising:

- (a) providing a heat-sensitive element as defined in any of claims 1 to 10,
- (b) image-wise exposure of the element to IR radiation or image-wise direct heating and
- (c) removing the exposed or directly heated areas of the coating with an aqueous alkaline developer.

14. Heat-sensitive composition comprising

- (a) one or more organic solvents,
- (b) at least 40 wt.-%, based on the total solids content, of at least one polymer soluble in aqueous alkaline developer selected from novolak resins, functionalized novolak resins, polyvinylphenol resins, polyvinyl cresols and poly(meth)acrylates with phenolic and/or sulfonamide side groups,
- (c) 0.1 to 20 wt.-%, based on the total solids content, of at least one (C₄-C₂₀ alkyl)phenol novolak resin insoluble in aqueous alkaline developer, and
- (d) optionally at least one further component selected from polymer particles, surfactants, contrast dyes and pigments, inorganic fillers, antioxidants, print-out dyes, plasticizers, carboxylic acid derivatives of cellulose polymers and substances capable of absorbing radiation of a wavelength from the range of 650 to 1,300 nm and converting it into heat.